

POLLEN POLY MIX PLANT BREEDING METHOD UTILIZING MOLECULAR PEDIGREE ANALYSIS

Abstract of the Disclosure

5 The present invention is directed to a plant breeding and testing
method that utilizes a pollen mixture derived from many male parents in conjunction
with field trials and molecular pedigree analysis to evaluate breeding values and
make progeny selections for the next generation of breeding. More specifically the
plant breeding method involves mixing pollen obtained from a breeding group
composed of a plurality of parental plants to obtain a pollen polymix. The polymix is
10 used to pollinate female reproductive structures from parental plants in the breeding
group to obtain a plurality of progeny seed lots. Each progeny seed lot has seeds
obtained from a different cross between the pollen polymix and a different parental
plant. Resultant progeny plants from each seed lot are evaluated using objective
criteria to obtain a phenotype score. The pedigree of at least some of the progeny
15 plants, usually those with a desirable phenotype score, is determined using molecular
parental analysis. Lastly, the pedigree and phenotype score are used to identify elite
plants for use in a next generation of plant breeding.